National Spent Nuclear Fuel Program
Strategy Meeting Agenda
April 23-24, 2002
Gaithersburg, MD

AGENDA: Tuesday, April 23

8:00	Introductions	Mark Arenaz
8:05	Welcome	Patty Bubar
8:10	EM Top to Bottom Review, Impacts on NSNFP	Woody Cunningham
8:30	National Spent Nuclear Fuel Program Direction	Mark Arenaz/ Andy Griffith
8:40	Action Items - October 2001 Strategy Meeting	Phil Wheatley
8:50	Repository Program Update	Jeff Williams
9:15	Repository Safety Case for DOE SNF	Paul Harrington/ EM-21
10:00	**Break**	
10:20	WASRD (the future), other data needs	Markus Popa
10:45	YMSCO FY02-03 Workscope to Support DOE SNF	David Rhodes
11:15	NSNFP FY02-03 Workscope	Phil Wheatley
11:45	Nuclear Materials Focus Area Direction	Phil Wheatley
11:45	**Lunch**	
1:15	Site SNF Strategies Focus discussion on the results of the Top-to-Bottom Review, Sites' strategies and plans to implement the accelerated cleanup, and identify needs to implement	
1:15	Hanford	Mark French
1:35	SRS	Randy Ponik
1:55	INEEL	Ron Ramsey
2:15	ORNL	Doug Turner
2:30	Sites' HLW Issues, Activities, Strategies	Denis Koutsandreas
2:45	**Break**	
3:00	Idaho Dry Storage Facility and Standardized Canister Design Availability	Ron Ramsey
3:30	Transportation Working Group Update	M. Arenaz/ Dave Zabransky
4:00	YMSCO Transportation Planning	Joe Price
4:15	Quality Assurance Update	Robert Blyth
4:45	**Adjourn**	

AGENDA: Tuesday, April 24

8:00	Opening Remarks	Mark Arenaz
8:10	Safeguards & Security Update	John Vlahakis
8:25	DOE - Contractor Strategy Session Breakout sessions focused on opportunities for improved SNF management as result of EM Top-to-Bottom review; identify issues/concerns that the NSNFP can address to assist the sites in meeting their accelerated clean-up schedules **Objective**: Identify and explore alternatives for improvement to the way we store and prepare our fuel for disposal. • Risk Reduction • Cost Savings (Corporate cost to DOE, Life cycle costs, & Near Term costs)	
10:00	**Break**	
10:15	DOE - Contractor Strategy Session (continued)	
11:00	Summary Report on Breakout Sessions	Andy Griffith
11:30	**Lunch**	
1:00	Panel Discussion/Q&A Open session to address other issues not specifically presented at this meeting	Mark Arenaz
2:30	**Break**	
2:45	Unidentified Fuel Object Management Panel Open discussion on how to manage objects found during pool closure measurements	Denny Fillmore
3:13	Action Items and Next Meeting	Mark Arenaz
3:30	**Adjourn**	

ATTENDEES

Abrefah, John
Arenaz, Mark
Armour, Don A.
Beck, Jim
Blaney, Dick
Bloomer, Tamara
Blyth, Bob
Braase, Lori
Bubar, Patty
Burns, Edward M.
Chambers, Billy
Cunningham, Woody
DeLeon, Gary
DeMonia, Brian
Doherty, Don
Duguid, James
Eckert, Howard
Erbes, H. E.
Fawcett, Rick
Ferrell, Larry
Fillmore, Denny
Follin, Jim
French, Mark
Gomberg, Steve
Goodwin, Karl
Griffith Tom
Griffith, Andy
Gupta, Dinesh
Harrington, Paul
Hill, Tom
Hull, Tom
Hurt, Bill
Karimi, Roy
Keister, Marsha
Koutsandreas, Denis
Linhart, Jim
Loo, Henry H.
Lowery, Virgil
Majumdar, Chandra
Martin, Jr., Guy
McCormack, Roger
Patterson, Mike
Ponik, Randy
Popa, Markus
Price, Joe
Ramsey, Ron
Rhodes, David S.
Rosen, Bob
Ross, Steven L.
Schuermann, Steve
Scorah, John
Senderling, mark
Siefken, David
Simonds, Jack
Swift, Bill
Turner, Doug
Twarowska, Stasia
Vlahakis, John
Wheatley, Phil

ISSUES

- High Level Waste - relaxing the Product Consistency Test (PCT) will help Hanford with budget issues.
  - The production of less robust HLW borosilicate glass should meet the repository requirements and save money at Hanford.

- Elimination of the consolidation of the Domestic Reactor Receipts (DRR) at the INEEL and SRS will impact the RW Transportation Program. RW will have to deal with the issues of transportation of DRR SNF from several more facilities, such as universities and small quantity shipments.

ACTION ITEMS

#	Action Item	Designee	Status
1	E-mail presentations to Scott Gladson (scg@inel.gov) or Lori Braase (bse@inel.gov) for inclusion on the NSNFP web page.	Presenters	Due 5/2/02
2	Review the RH-TRU analysis included in the 96-EM-67 National Program Task Team Draft document for path forward alternatives for met mounts.	Andy Griffith	
3	Quantify your GFOs and send the information to Andy Griffith and Phil Wheatley.	Sites	
4	Review the GFO information from the sites and determine if it can be added to the orphan materials list. Contact Denny Fillmore with determination.	Andy Griffith	
5	There will be a site exchange of information on May 2, 2002, at 11:00 EST. The phone number is (301) 903-6058.	Sites	Due 5/2/02
6	Site actions are due by May 10, 2002. Send them to Andy Griffith.	SRS, INEEL, Hanford	Due 5/10/02
7	Send the list of questions (actions) from the INEEL session to Ron Ramsey.	Dinesh	Due 4/25/02
8	Send concurrence to the INEEL's questions (actions) to Dinesh.	Ron Ramsey	Due 4/29/02
9	Provide the draft response to the EM-1 actions to the sites and EM-40.	Andy Griffith	Due 5/20/02
10	Provide the INEEL DRR shipping schedule to Hanford.	Andy Griffith	Due 05/29/02
11	Add the sites, NSNFP, and EM-40 to the response from RW when transmitted to EM (sometime around the middle of May).	Andy Griffith	Due Mid-May

NATIONAL SPENT NUCLEAR FUEL PROGRAM
STRATEGY MEETING SUMMARY
April 23-24, 2002

The information below represents discussion highlights or questions raised during the presentations. Copies of the presentations will be available electronically on the NSNFP Web page after May 24, 2002, at http://nsnfp.inel.gov/program.

Welcome
Patty Bubar

Patty Bubar welcomed the participants and encouraged everyone to challenge current assumptions and identify alternatives to managing DOE SNF.

EM Top-to-Bottom Review, Impacts on NSNFP
Woody Cunningham

- We need to accelerate risk reduction within EM.
  - Consolidate SNF into dry storage.
  - Close smaller sites with consolidation efforts.
  - Consolidate three basins into one at SRS.
  - Hanford is moving out of the K-basin area.

- We need to work with RW to minimize/eliminate duplication of effort. A strong National Program is needed to assume the responsibility to reduce risk. Questions we are asking include:

Q. Does a consolidation of EM SNF in standard canisters cause problems to Yucca for disposal?

Q. Why is EM packaging high integrity SNF when commercial industry does not have to?

Q. Does the EIS and ROD need to be revisited if current SNF consolidation plans change.

National Spent Nuclear Fuel Program Direction
Mark Arenaz/Andy Griffith

- We will continue to focus on safe interim storage of SNF.

- We want to see what can be done to improve our approaches to SNF management.

- We also want to look at how we can factor in any new alternatives.

October 2001 Strategy Meeting Action Items Review

Phil Wheatley

Phil Wheatley reviewed the status of the action items from the last NSNFP strategy meeting held in October 2001.

Repository Program Update

Markus Popa

- Yucca Mountain approval status.
  - There are 131 sites in the United States storing SNF.
  - On February 14, 2002, Secretary Abraham formally recommended approval of Yucca Mountain.
  - On February 15, 2002, President Bush notified Congress of his approval.
  - The next steps will be in the Congress.

- Any changes to the DOE SNF handling and packaging requirements will significantly impact the License Application schedule for 2004.
  - Other waste stream issues will be considered, but not in the next two years.
  - It is difficult now to make changes in the near-term.

- The EIS is adequate for the current path forward.
  - There are a number of changes on the horizon.
  - There is some sensitivity to changing the EIS prior to License Application.

- Design solutions or different waste forms will be done after License Application.
  - The basis for License Application will be the same as the site recommendation.
  - We don't want to negatively impact NRC's approval.

- RW accepts the fact that future licensing amendments will be needed to accept other SNF types.
  - This requires a determination that the SNF will not impact the EIS or repository performance.

Q. Have the HLW and SNF disposal scenarios been factored into the shipping schedules?

A. Yes. The shipping schedules are being use as the planning basis for EM SNF. RW will continue to work with EM to keep the schedules updated.

Repository Safety Case for DOE SNF

Paul Harrington

- One of the outcomes from a meeting held April 2-4 was to roll the DOE SNF strategy into the overall RW licensing strategy.

Discussion on Other Work (no presentation slides)

- Over the last six months, the BSC has been looking at different alternatives on how to do things faster, cheaper, and smarter.

- Need to support waste emplacement by 2010 with the Yucca Mountain License Application in 2004 (Plan B is to receive construction authorization in 2007).

- Current design solutions include:
  - One large surface facility for handling SNF.
  - One large subsurface emplacement facility.

- A design review was held the middle of April to determine if:
  - The design requirements were understood enough to move from conceptual design to preliminary design.
  - The design solutions warranted further development.
  - We had a good understanding of the design outputs.

- We want to try to ensure RW's ability to emplace SNF by 2010. Things to consider are
  - New design solutions.
  - Effects of new waste forms in the repository.

- BSC provided other alternatives in support of Plan B for the surface and subsurface facilities. No changes were proposed for the waste package.

- Since one large surface facility requires more time, immediate funding, and is very crane dependent (equipment failures and down time issues), a new proposal is to start with a smaller surface facility to handle dry loading of SNF (first module).
  - Minimal SNF throughput.
  - Low capability facility.
  - Could handle the most common SNF.

- The second facility (module) would focus on wet loading of SNF or off normal SNF.
  - Larger throughput and staging area.
  - Larger lag storage area.
  - Used to meet CRD ramp-up within five years.
  - Incorporate lessons learned from first facility operations.

- The third module would be a larger version of the first module with all capabilities.

- Another issue is how will this facility be hardened?
  - One idea is to move the aging facility underground.
  - Smaller buildings are less attractive and could also be put underground to resolve some terrorist threat issues.

Q. Isn't it more cost effective to build one building?
A. Yes, but tradeoffs have to be made with early emplacement and a smaller facility that can be on-line quickly.

Q. What about lag storage for hot commercial fuel?
A. Aging facility on the surface could release the heat easier than if it were underground.

- There will be three workshops this summer to capture information for the License Application. The information from these workshops should be shared.

WASRD

Markus Popa

- WASRD Revision 4 is out on the homepage.

- WASRD Revision 5 was started last week.
  - Comments are due May 9.
  - The revision intended to separate the true legal requirements from agreements.
  - This should clarify what is negotiable and what is not (e.g., final dimensions).
  - Appendix D has the legal requirements.
  - ICD requirements were handed off to David Rhodes in Revision 4.

Q. Some issues were identified in Revision 4 and promised to be addressed in the next revision, but it doesn't look like that is what is included in Revision 5.

A. Revision 5 was issued to change the formatting to quickly respond to a request from the undersecretary. Revision 6 will address the concerns raised by the sites and the Navy on new waste forms, etc.

YMSCO FY-02 – 03 Workscope to Support DOE SNF

David Rhodes

- The YMSCO and the INEEL workscope are coordinated and funded.

Q. If criticality is screened out, why is it in the License Application?
A. We are doing validation reports to check on why it was screened out. Was the screen correct?

- Timing now is the issue with the License Application.
  - Changes in casks, canisters, SNF, handling, etc., have to wait.
  - We can't take people off the current design schedule to work on the Plan B alternatives.

Q. How will SRS ship its HLW without the melt and dilute process? Can they package it into a standard canister? Can it be co-disposed with SNF?
A. The SRS HLW has could have major impacts to the Yucca Receiving Facility.
  - This is not pristine fuel. This has major impacts to the receiving facility.
  - Commercial industry cannot guarantee the integrity of their fuel assemblies, especially on their high burnup fuels. Some of their issues are very similar to issues with DOE SNF.
  - SRS SNF is cropped fuel and is not readily grappleable.

NSNFP FY-02 – 03 Workscope

Phil Wheatley

- The NSNFP budget was planned for $14.7 million and later reduced to $6.4 million.

- Reviewed the workscope in support of repository License Application for 2004, we have about 9-12 months to complete analysis and begin writing the License Application.
  - Worked jointly with BSC on the analysis.

Nuclear Materials Focus Area (NMFA) Direction

Phil Wheatley

- The NSNFP partnered with EM-50 about 24 months ago.

- EM-50 is currently undergoing a significant funding reorganization.

- There are five focus areas being dissolved and their activities are being refocused.

- The SNF product line had five projects funded in 2002.

Q. What about drying?
A. Looking for a consensus standard that is performance based and useful to anyone needing to dry fuel.
   - Working with ATSM and the NRC.
   - The issue that we are dealing with is, "What is dry?"

Q. Are there any steps that EM-40 or EM-20 could take to support EM-50 in 2003?
A. Yes. The end users need to tell EM-50 how important the activities are to their programs. This is driven by end user needs.
   - We have stated this before and their answer is that if the work is that important to the sites, then they need to fund it.
   - EM-50 is looking for breakthrough discoveries to reduce costs, but NSNFP has been organized and moving forward with good structure for several years, making it hard to find those breakthroughs.

Hanford SNF Strategies

Mark French

- Hanford is packaging about four MCOs a week in a 24/7 production mode. They have a 10% inspection requirement and are about one month behind schedule.

Q. Do you have packaging facilities?
A. Yes, for small shipping casks. A new facility is needed to package large casks.

Q. Is there any further analysis needed to ensure the MCO is transportable?
A. Yes. We need to identify the cask first, then identify what analysis is needed for the MCO.

SRS SNF Strategies

Randy Ponik

- After the repository opens, SRS will stop receiving DRR SNF. In FY-02, five DRR sites sent SNF to SRS. Will they ship directly to the repository or will the repository pick up the SNF from each DRR site? This would significantly increase the number of locations that RW will have to pick up and transport from.

Q. Has there been a change in the participation rate?
A. No. There has been some indication that the Canadians may be coming back into the FRR program.

Q. Has there been an increase in participation?
A. Some rumors extend the date to 2009.

Q. What about standard canister use?
A. SRS was planning on using the standard canister for melt and dilute product. Not sure how or where the program is going now that melt and dilute has been canceled.

INEEL SNF Strategies

Ron Ramsey

Q. Do you have enough storage space to consolidate all SNF at INTEC?
A. No. We would have to build a new pad for the SNF at TAN-791 and for the West Valley SNF as well.

ORNL SNF Strategies

Doug Turner

Q. Describe your repackaging operations.
A. The 3525 hot cell facility was used. In the 1970's, we experimented on packaging options. It is a good size facility. The hot cell has a horizontal port that is 14" in diameter. The finished fuel canisters do not go into the hot cell. The are loaded through the hot cell wall into the canister.

Q. What is the size of the canister?
A. 5" diameter stainless steel canister that is 34" long.
- 20 canisters will fit into a TN-FSV cask for one shipment.
- There are flux traps and neutron absorbers in the transportation cask.

HLW Overview

Denis Koutsandreas

- Hanford has 17 different types of HLW and SRS has 2 types.

- We are making an attempt to get the HLW alternatives into the License Application.

Idaho Dry Storage Facility and Standardized Canister Design Availability

Ron Ramsey

Q. What is the Defense Contract Audit Authorization (DCAA)?
A. They audit all contract closeouts.

Q. What changes have been recommended by Foster Wheeler to the standard canister?
A. The recommended changes are a larger canister plug, heavier shell, a welded impact plate, and a welded backing ring.

Q. Why couldn't IFSF be used to load SNF at the INEEL?
A. It is too small and they don't have a hot cell.

Q. Which SNF could not go through the IFSF?
A. There is no working area; it is hard to get the casks in and out of the facility; there are crane restrictions, it is hard to separate wastes, the LWBR SNF will not fit, and the facility can not handle the largest cask in the system.

YMSCO Transportation Planning

Joe Price

- The development of the EIS for SNF, HLW, and Yucca Mountain involved a lot of dialog and many of the same contributors worked on both.

Q. Are the rail tracks going to be exclusive?
A. No. We could make them available for commerce use.

Safeguards & Security Update

John Vlahakis

Q. Were you looking at a standard unit like a standard canister?
A. Yes. Analysis was based on the standard canister of fuel. The weights and data are in place so we can analyze different fuels. We now have more flexibility and can explore concepts that we have not planned for yet.

Q. How does the standard canister fit into safeguards and security?
A. The weight of the canister is a barrier against theft. Smaller canisters would be considered an easier target for theft.

Q. When is this a concern?

A. From the time the impact limiters are off (Part 63) until the canister is emplaced. Repackaging SNF in the surface facility increases the attractiveness of the SNF, which also makes the difference between a Category 1 and 2 facility.
   - There are three factors to determine attractiveness.
     1. Fissile content.
     2. Separability.
     3. Weight.

Q. Do we see any focus on sabotage?
A. No, we are more concerned with theft. For a 10 CFR 73.51 commercial facility, the NRC requires certain things in place. 10 CFR 73.46 requires the protection against design basis threats.

CONTRACTOR BREAKOUT SESSIONS
Andy Griffith

- If you have any new alternatives for HLW, please send them to Denis Koutsandreas.
- Need to break into teams for SRS, Hanford, and the INEEL to look at the alternatives for SNF management.
- Look at ways to accelerate risk reduction and save money.
- Address policy and procedure approaches.
- Look at the life cycle impacts to alternatives to manage, prepare, and receive DOE SNF.
- Reevaluate our strategy and approaches to develop a good honest approach.
- Don't make any final conclusions or recommendations today.
- Look for technical scope impacts to schedule and costs.
- Identify the pros and cons for the alternatives.
- Push the constraints (i.e., EPA, state agreements).
- Identify homework from each team that can be finalized by May 10 so recommendations can be sent to EM-1 by May 24.
- The objective of this breakout session is to identify and explore alternatives for improvement to the way we prepare and store our fuel for disposal.
- Work off the current EM baseline, then build your alternatives.

Q. How does EM see risk?
A. Vulnerability studies (94-2) and Health and Safety reductions.

Summary Report – Hanford

Andy Griffith

- FFTF will be included in the EM budget for FY-04.
  - Consider putting the SNF in a MCO rather than on a storage pad.
  - Timing is an issues for removing the SNF.
  - Near term savings realized by getting the SNF out.
  - Why not have FFTF responsibilities with NE?
  - Some safeguards and security issues.

- EMT treatment
  - An option is to follow up with the HLW RCRA resolution to remove the need to treat it.

- Accelerate the transfer of MCOs from Hanford to Yucca Mountain to provide additional storage at Hanford for their HLW.
  - The earlier the SNF is out, the less need for storage space at Hanford.
  - HLW interface.
  - Depends upon RW's ability to receive the MCOs earlier.
  - What is RW's acceptance schedule, how many, and for what fuel types? Current Integrated Repository Receipt Schedule is in place.

- Survivability and transportability of the MCO is an issue.
  - Look at other fuels in the DOE complex that are difficult to address.

- Opportunity for the INEEL: Relook at their met mount material to determine if it can be reclassified based on the RH TRU DOE Order Assessment.
  - There was a draft document issued from the National Program Task Team (96-EM-67) that identifies path forward alternatives for met mounts. It is not know if the document was issued as "final."

- Develop poisons to ensure the efficient loading of FFTF SNF.
  - Advanced neutron absorber studies from NSNFP.
  - There is a near-term need at INEEL for poisons for TRIGA and LWBR.

Q. Why would EM take FFTF if they are trying to get out of this business?
A. NE doesn't have much of a presence at Hanford.

Q. Should we look at cost reimbursement from NE to EM for FFTF? Analyze the overall cost savings with the transfer.
A. Based on EM's ability to shut down reactors. Where would the cost savings be in a transfer from NE to EM?
- Cost neutral?
- Need to identify the impacts as well.
- EM decisions are based on case-by-case determination.

Q. Who owns the recommendations from this strategy meeting?
A. EM-20.

Q. Will the sites get to review and comment on the recommendations?
A. Yes.

Q. How does EM-40 fit in?
A. It may be a joint recommendation with EM-20. EM-40 is a full partner in this.

Q. Recommendations are due in May, which is a short turnaround for some of this information.
A. They are due by May 15 from RW, but if the answers aren't available to support the recommendation(s), they is won't be made.

Summary Report – SRS

Howard Eckert

- Combine the three wet storage basins into one.
  - K-basin next year.
  - RBOF in 3-4 years.

- Keep the non-aluminum SNF at the SRS.
  - Look at impacts on storage in the K-basin.
  - The EIS/ROD may have to be changed. (Are these costs being factored in?)
  - Other cost and schedule impacts are supplemental analysis, decisions that impact agreements with the states, TPAs, compliance agreements, and others.

- SNF preparation
  - Reprocess the fuels in the canyons.
  - Direct disposal/co-disposal.

- SNF shipments
  - Standard canister
  - Road ready canister
  - RW pick up of SNF from the sites and universities.

Q. Is SRS looking at reprocessing the FRR?
A. No, just storing it.

Q. If you reprocess at SRS, does that produce more HLW?
A. Yes, but not that much more.

Summary Report – INEEL

Dinesh Gupta

- Keep FRR at SRS and do not transfer any to INEEL.
- Leave the SNF where it is and let DOE-RW pick it up from the storage locations.
- Leave the FSV SNF in Colorado.
- Give FERMI responsibility back to NE.
- How much can be shipped in bare form?
- Is the characterization cost included in the bare fuel form? Not at this time.
- Do we have sufficient storage? Evaluate the Foster Wheeler need.
- Look at the projected needs for CPP-666 (FAST).
- Comment: These items seem more like questions, not recommendations. Don't describe them as alternatives. The answers to these will not come from "in-depth" analysis if they are due by May 10 and there is no additional funding for the analysis. There will not be enough time to reach conclusions, but we should be able to determine if we should pursue further analysis.

Unidentified Fuel Object Management Panel

Denny Fillmore

- Should we have a unified strategy to address these "pieces" that are left in basins after SNF removal?
  - Example: The INEEL emptied the ARMF of SNF and turned it over to D&D. They found capsules of material of questionable origin.
  - Example: CPP-603 turnover to D&D.
    - 10 kilograms of uranium was the D&D limit.

    - Safeguards said 0.5 gram was a throw away limit.
    - A scan of the basin floor was required to identify these hot spots (0.5 grams).
    - 200 spots were identified that were too hot to scan.
    - Do we have to retrieve these? Are they part of SNF?
    - How will we know what kind of fuel it was?

- Oak Ridge and SRS have wet basins and sludge to clean as well.

- What are Hanford's plans?
    - Hanford pulled out intact fuel elements that were left in the basins. They were added back into the SNF inventory.
    - The N-reactor pieces were consolidated to baskets and put in the appropriate MCOs.

- What are plans at ORNL to deal with unidentified fuel pieces?
    - Determination is made on a case-by-case basis.
    - Could be some benefit to discussions of the report on RH-TRU for ORNL.
    - Good idea to establish a complex-wide standard on these unknown fuel pieces as an alternative to detailed characterization.
    - Drawing the line on met mounts is a big issue.
    - How do you get an acceptable package?
    - What goes to WIPP versus Yucca Mountain should be clarified.
    - If we package these pieces as SNF, how do we characterize it?

- The capsules found in the ARMF at INEEL were identified as part of a test program. They were not destructively examined.
    - The 0.5 gram limit was an economic issue when SNM was of high value.

- Hanford sent a letter to WIPP and they gave them a determination as to whether their "pieces" were RH-TRU or not.